

BROWN (J.B.)

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REMARKS ON THE TREATMENT

OF

CURVATURES OF THE SPINE AND CLUB-FEET.

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N<sup>o</sup> 3.



12 weeks after the operation.

N<sup>o</sup> 4.



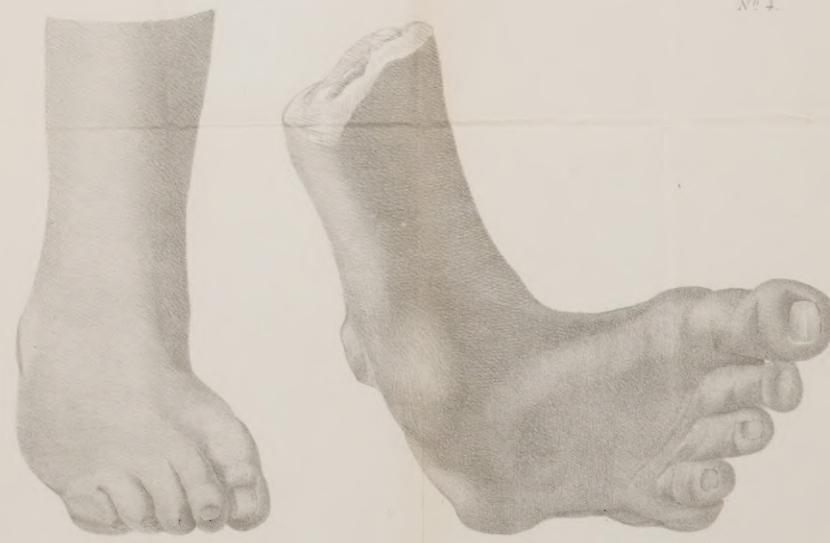
Six month after the operation.

N<sup>o</sup> 2.



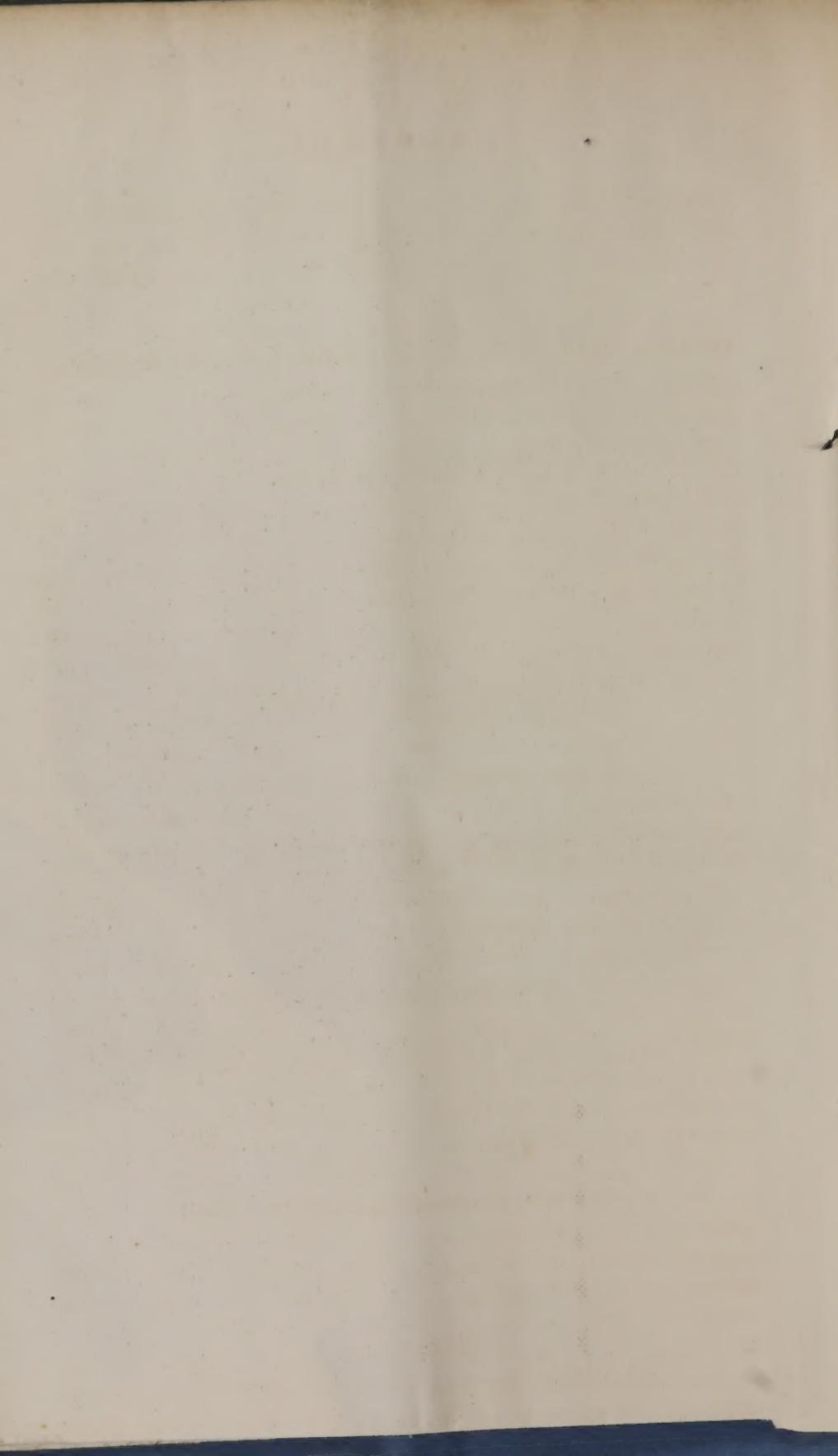
Six month after the operation.

N<sup>o</sup> 4.



Six weeks after the operation.

Previous to the operation.



## REMARKS

ON THE

## OPERATION FOR THE CURE OF CLUB-FEET,

WITH CASES.

ALSO,

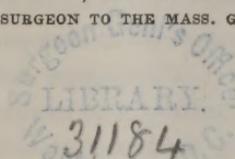
LETTERS TO JOHN C. WARREN, M.D.

ON

## CURVATURE OF THE SPINE.

BY JOHN B. BROWN, M.D.

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## OPERATIONS ON CLUB-FEET.

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*To the Editor of the Boston Medical and Surgical Journal.*

SIR,—I send for insertion, in your useful periodical, a description of some of my operations on club-feet. I have not selected the most favorable cases for the purpose of display. They are taken according to date, as they occurred. The expense attending taking casts, and drawings of casts, and engravings from the drawings, has deterred me from doing it as often as I should otherwise have wished. The following may be considered as fair samples of the improvements which have resulted from all my operations upon club-feet. Where both feet have been deformed, I have usually taken casts of only one, and that the one which was the most distorted. Both feet are represented in the first case below.

The operation for improving club-feet and other deformities by dividing the tendons, I consider one of the greatest improvements in modern surgery. Still much caution is necessary, or much harm will be produced. I am convinced, from the experience I have had, that much improvement may be made in distorted limbs by well-adjusted mechanical apparatus. There is fear that the cutting of tendons may be carried to excess. All improvements in the healing art, if favorably brought before the profession, are adopted with enthusiasm. My own opinion is that much discretion is required in this operation, and that tendons ought not to be cut without due consideration. I should never cut a tendon, if by the scientific adjustment of apparatus the limb could be restored to its natural form and symmetry without giving too much pain. The operation of cutting tendons for the improvement of deformed limbs, particularly club-feet, is not of recent origin. It was done in Frankfort, Germany, as early as 1784, by Lorenz. The next operation of dividing the tendo-Achillis, for the improvement of club-feet, of which we have any record, was done in 1811 by Dr. Michaelis, of Morbourg. Sartorius published a case in 1812, where he divided the tendo-Achillis in 1806. This was a case of pes-equinus, not congenital, but acquired, produced by an abscess in the soft part of the leg. I have now an

application to operate for a case precisely similar, produced also by a similar cause. This operation was revived in 1814 by Delpech, who was at that time owner of one of the greatest orthopedic establishments in Europe. Delpech was the first operator who avoided dividing across the entire skin, as had been done by all his predecessors. He pointed out the importance of preserving the skin over the tendon.

Stromeyer's first operation of dividing the tendo-Achillis was performed in the year 1831. He was not very successful. His impression was that the two ends of the tendon, after being divided, ought to be kept in contact as near as possible, and he invented an apparatus for this purpose, which bears his name. The fact is, the operation was brought into disgrace by the mistaken notion that the two ends of the tendon, which had been divided, ought to be brought as near in contact as possible. The theory was, that a plastic matter was thrown out from each end (like the oozing of a young sapling which has been cut), which became inspissated, and that it was unsafe to separate the ends of the tendon until this intermediate substance had become sufficiently consistent to be stretched without losing its integrity to each end of the tendon, which had been divided.

M. Bauvier is entitled, I believe, to the credit of first bringing this operation into scientific notice. He found, after repeated experiments upon animals, that from the second to the third day after the section of the tendon, the cellular sheath which surrounded it had become thicker and more consistent than in the natural state—that it was open only on the side where the instrument had penetrated—that it embraced the two extremities of the divided tendon—that its internal surface was ecchymosed, tinged with a deep red in contact with itself and with the tendinous extremities, which had the same color at their surface—that in nine days the band which it formed was solid and adherent to the ends of the tendon which had been divided—that it was of a grayish color and offered no appearance of fibres—that the canal it formed was contracted, and presented no longer any opening—that its walls were in contact, and often empty, sometimes filled with blood partially coagulated—that it was towards the 12th or 13th day the canal began to disappear, and by the 18th it formed a resisting band of the same size as the tendon, and adhered at its extremities; the canal having almost entirely disappeared, the tissue being close, slightly infiltrated by a serous fluid, and beginning to offer a fibrous structure—that on the 24th day, the intermediate substance was like the fibrous tissues, slimmer than the tendon itself, had great force of resistance and adhered to it solidly—that it then offered no trace of the inflammation which had served to

produce it—that on the 35th day the intermediate substance was perfectly continuous to the tendon, but could be distinguished from it—and that towards the 76th day, it presented the same appearance as upon another animal, but much more solid.

M. Jules Guerin, director of the orthopedic institution, Paris, coincides, I believe, with M. Bauvier in the above theory. I expect a communication from the former gentleman in a few days, accompanied by the works he has recently published—also drawings of new apparatus for correcting curvatures of the spine. This gentleman has lately performed some new operations on the back in cases of great distortions of the spine. These consist in dividing those tendons and muscles of the back which are the principal agents in forming the curvature. I hope before long to be able to avail myself of his experience. No operation, however, of this kind will be performed unless by the united advice of the consulting surgeons of the Orthopedic Infirmary in Boston, and with the full consent and wish of the patient.

It may be considered somewhat incumbent on me to describe the manner in which I divide tendons for the cure of club-feet. I will therefore simply state, that when I have prepared my patient for the operation, I place him on his stomach upon a bed, with his legs extending over the sides from the knee. I then place myself in a chair between his legs, having one assistant to hold the lower limb firmly, and another to flex the foot. I then operate upon the inside of each foot, by making a puncture through the integuments, flatwise of the instrument, then turning it and dividing the tendon—taking care to withdraw the instrument in the same manner as introduced. After the operation is over, I place a compress on each side of the divided tendon, wet with cold water, and put a bandage round the ankle loosely, but in such a manner as to keep the compresses in place. I then apply my usual apparatus for bringing down the heel and flexing the foot. If this is done at first, it gives no pain, but if omitted for two or three days it gives great pain. The apparatus ought always to be applied at first. I ought to have premised that I usually put over the orifice a strip of adhesive or court plaster, to prevent any oozing of blood. There is, however, seldom much trouble on this account. I suppose, in nine times out of ten where I have operated, there has not been a drop of blood. This is accidental, however, and depends upon hitting some little cutaneous vein. The instrument I use is very small, more like a cataract needle than any other surgical instrument. It is what Bauvier calls a tenotome, or tendon cutter—derived, I suppose, from the Greek words tenon and tomos. Many use a very narrow, straight-edged bistoury

for cutting tendons. I do not think this so good an instrument as the above, for several reasons. One is, it cannot be moved about with the same facility as the tenotome, without increasing the opening in the integuments; another is, it is not so safe an instrument; and a third is, that a concave-cutting surface does the work much more conveniently.

There are three general divisions of club-foot, made use of by classic authors; viz., varus, valgus, and pes-equinus or horse-foot. That termed varus, is where the foot is turned in, and the subject of it rests his weight upon the outer part of the foot and external ankle. That termed valgus, is where the part is turned outwards, and the subject of it rests his weight upon the inside of the foot. This kind of club-foot is not so common as that termed varus—is seldom congenital, and is usually acquired from accident, as is also pes-equinus. These general divisions of club-foot are sub-divided into degrees; viz., 1st, 2d and 3d, which indicate the extent of the deviation.

At some future period, with your permission, I shall make your Journal the medium of some further communications upon this subject.

#### *Representation of Cases.*

The following description of the case represented in *Plate No. 1 and 2*, is extracted from my note-book.

February 13, 1839.—Julia Ann Goward, of Milton, Mass., came under my care with two club-feet. She is  $3\frac{1}{2}$  years old; never has walked. She has little or no use of the left arm. It hangs pendulous from the shoulder, in consequence of an imperfect articulation of that joint. The left arm and left leg are each precisely an inch shorter than the right. Her joints are loose and rickety, and her limbs feeble. Her bodily health appears to be good.

February 21st, at 3 o'clock, P. M., divided the tendo-Achillis in both feet. The ends separated about an inch. The feet came round very well; brought the heels immediately down, agreeably to M. Bauvier's direction. The child appeared to suffer little or nothing from the operation. There was not a drop of blood from the left foot, and only four or five from the right. Drs. J. M. Warren and J. W. Gorham were present; also Mr. J. W. Phelps, machinist. Saw her at 5 o'clock, two hours after the operation. She was sitting quietly upon the sofa, eating her bread and milk. Saw her again at 7 the same evening; she was in bed, asleep. Saw her again at 7 the next morning. She had not been at all uneasy or restless, but had slept quietly the whole night, without waking. No anodyne was given. It seems unnecessary to

continue a detailed daily record of the treatment of this case, as it would take up too much room in your Journal, and would be, from its sameness, uninteresting. Suffice it to say, that this child has apparently suffered no inconvenience from the operation or treatment up to this date, March 21st. She stood erect upon the soles of her feet on the 18th, and began to walk on the 36th day after the operation. The drawing of the left foot does not represent the extent of the present state of its improvement. Two casts were taken for the purpose of giving an exact representation, but neither of them were successful. Her present situation may be known from the following letter recently received from her physician at Milton, Dr. Jonathan Ware.

**DR. BROWN.**—*Dear Sir*—You ask my opinion as to the result of the operation which you performed on Julia Ann Goward, for remedying club-feet. It has certainly exceeded my most sanguine expectations. The little girl, actually unable to stand or support the least weight of her body upon her feet (so great was the deformity), is now, a few months after the operation, able, with the slight assistance derived from a cane, to walk about the house. The operation and applications by which you have been successful in relieving her, I would most earnestly and confidently recommend to the attention of all persons having children similarly afflicted.

Respectfully yours,

*Milton, Aug. 30, 1839.*

**JONA. WARE.**

**Plate 3d.** The following description of this case is extracted from my note-book.

May 15th, 1839.—Miss Ellen Moreen, of Bath, Me., came under my care. The left foot, in her case, is very much deformed. It is of that class termed varus, of the 3d degree. She was born so. She is now 29 years old. She walks upon the outer ankle and upper part of the foot, upon the os cuboides and the upper side of the metatarsal bones of the little toe, and the one next it; the little toe and the one next it, with their metatarsal bones, being turned under; the little toe and the great toe being in contact on what should be the base of the foot. Her walking in this very unnatural position of the foot is attended with great pain, as must naturally be expected. The places upon which she rests her weight when she walks, are indicated in the above drawing by a kind of artificial heels, formed by a thickening of the integuments upon the outer ankle and upper part of the foot, marked Nos. 1 and 2.

17th.—Divided the tendo-Achillis, or great heel cord—also the tendon of the tibialis anticus, and the tendon of the flexor longus digitorum

pedis profundus perforans in the sole of the foot, in presence of E. W. Leach, M.D., of this city, whose success in the treatment of hernia has rendered him celebrated in this branch of surgery.

18th.—Has had no pain or spasms; slept all night. Gave no opiate.

19th.—Slept well; has had no pain.

23d.—Has gone on very well; has experienced no inconvenience from the operation. Examined the tendo-Achillis; found it had united, and the space between the two ends of the tendon, which had receded a full inch from each other, entirely filled up, so as to form a continuous cord.

June 8th.—Divided the tendon of the long flexor again, and also the aponeurosis plantaris in the sole of the foot.

15th.—Put on a high shoe with instep straps, and an upright steel splint on the inside, and an iron sole with a strap two yards long, so applied as to bring in the ankle, and confine the foot to the sole of the shoe (my usual apparatus being laid aside, as it produced pain). Directed walking daily.

Sept 8th.—It has been unfortunate for Miss M. that owing to the unusual sensitiveness of her foot, she has not been able to bear the apparatus best calculated to correct the deformity. Her improvement, as above described in the drawing, has been in a great measure owing to her resolution—being a young lady of firm mind and fixed determination, she has resolutely kept the foot upon the sole, and persevered in walking as I directed. I will venture to say that in the course of three years no one will readily discover that her foot was ever otherwise than natural.

*Plate 4th. Extract from my note-book.*

July 9th, 1839.—Miss Ann Frances Randall, daughter of James Randall, of Topsham, Me., came under my care with two club-feet. They are of that class termed varus, of the 3d degree. She is seven years old, and perfectly healthy. She was recommended to apply to me by a gentleman deservedly celebrated, Dr. John Stockbridge, of Bath, Me., who also put under my care Miss Moreen, the patient whose case is above recorded.

10th.—Divided the tendo-Achillis in both feet.

11th.—She has suffered no pain from the operation. The night was extremely hot, and she was rather restless. Gave sol. sulph. magnesia.

12th.—Slept better; has no pain in the feet. For reasons above specified, I shall not continue a detailed daily record of the treatment of this case.

17th.—The feet are doing well—very well; she has suffered no inconvenience from the operation. She has been a little impatient in

bearing the application of the apparatus, and has not kept it on so steadily as I could have wished, which has retarded her improvement.

August 7th.—She began to walk this day, without aid or taking hold of anything, which is four weeks from the time of the operation. In five weeks she walked up and down stairs, and in six weeks she walked freely and with ease anywhere. There was then, and still is, Sept. 10, some awkwardness in her gait. The muscles of the leg are brought into new action, and they have not as yet become accustomed to it; but she is daily and rapidly improving, and her feet will soon cease to be a deformity.

Sept. 27th.—She returned home very much against my wishes. Had she continued here six months longer, I think she would not have suffered by comparison, if placed at the fashionable dancing school of Monsieur Papanti.

My respected friend, John Randall, M.D., of this city, saw the above case previous to its being operated upon, was present at the operation, and has witnessed the progress of improvement. His opinion of the success of the operation, the manner of doing it, and the mode of treatment, is expressed in the following letter which he has had the kindness to send me.

MY DEAR DOCTOR,—Having lately seen the little girl, for whom you operated in the early part of July, I desire to address you a few lines on the subject of her case, and to thank you for the opportunity afforded me of witnessing the operation. You will probably remember, that a female child, seven or eight years old, was sent you from Tops-ham, Me., for your examination and advice, and that you were kind enough to invite me to see her with you. She had club-feet of that species denominated varus, and was unable to do better with them, than to hobble a little about the house. Your opinion was in favor of a division of the tendo-Achillis on each side, and the application of certain apparatus. You proceeded to the operation, which was speedily performed, and which appeared to give but little pain to the patient. Not more than three or four drops of blood were lost at the time, and no unpleasant symptoms followed the operation. The little girl appeared cheerful and happy. The apparatus was applied without any inconvenience to the child, and varied from time to time, as circumstances required. I saw her occasionally during her treatment, and witnessed her gradual improvement. Your success has been complete. She now treads naturally upon her feet, turns them out like other children, and

walks so well, that I should not know, from common inspection, that she had ever had an infirmity of these members; except from a little clumsiness in the use of muscles, which have long been in a state of disuse, and which she will probably acquire the natural use of by a little practice.

I cannot but think this operation for club-feet a great improvement in modern surgery, and have to thank you for leading the way in this place for its successful cultivation. Having witnessed your success in the above case, I shall not now despair of your ability to overcome greater difficulties and deformities.

I am, dear Sir, very faithfully your friend and humble servant,

*Boston, Oct. 1, 1839.*

J. RANDALL.

DR. BROWN.—*Dear Sir,*—In compliance with your request, I can state that I have seen a number of cases of club-foot operated on by you, which appeared to be much improved and in a fair way to be cured.

*Boston, Oct. 10, 1839.*

Your obedient servant,

J. C. WARREN.

JOHN B. BROWN, M.D.—*Dear Sir,*—Mrs. Randall, on her return, called on me with her daughter and delivered yours of Sept. 26th. I was much pleased with the appearance of the little girl's feet, which she could place in their natural position on the floor, and walk with great ease. The success which has attended this operation, must be highly gratifying to yourself, as it is to me and all her friends.

The success attending the operation in Miss Moreen's case is far beyond my expectations, considering the age of the patient, and the extent of the deformity, and I think in 12 or 18 months, when the articulating surfaces and muscles of the parts concerned shall become adapted to their new position, she will have a good and useful foot. Having done so well in Miss Moreen's case, you need not doubt your ability to succeed with any case of this kind which in future may offer.

Yours respectfully,

*Bath, Oct. 19, 1839.*

JOHN STOCKBRIDGE, M.D.

I have now under treatment a young man, a shoe-maker by trade, 24 years old, with double varus of the third degree. He applied to me by the recommendation of Dr. Woodbury, a distinguished Physician of Bedford, N. H., who himself placed under my treatment his own daughter, an interesting little girl with a curvature of the spine. Also a gentleman 30 years of age, a student of divinity at the Theological Institution in Cambridge, with double varus of the third degree. This

gentleman applied to me through the recommendation of Dr. Bowditch, a highly respectable physician of this city, and his friend and classmate. The improvement in the above two cases is not rapid, but gradual and sure. There can be no question but they will have good feet if they persevere in appropriate applications; and who would not? who would think, in such cases, that two or three years were mispent in acquiring the ability to walk with ease, like other people, say for 30, 40, or 50 years more? Three years are only a fractional part of three score and ten.

*Boston, Oct., 1839.*

**JOHN B. BROWN, M.D.**



## LETTERS TO JOHN C. WARREN, M.D.

ON

### C U R V A T U R E O F T H E S P I N E .

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#### LETTER I.

DEAR SIR,

HAVING had some conversation with you upon the treatment of spinal affections, and knowing the lively interest you always take in the improvement of every branch of your profession, as well as from the high standing you occupy as a surgeon and physician, I am induced to address to you the following remarks. Having lost my eldest son (as you well know) by inflammation of the great spinal cord, and having now a near relative suffering from lateral curvature of the spine, my attention has been forcibly drawn to the study and treatment of spinal diseases generally, and to the correction of other deformities of the human body, such as distortions of the limbs, club-feet, &c. &c., and I hope my exertions may not prove entirely useless to those who may be suffering under these complaints.

Spinal affections are, for some reason or other, daily increasing in this community. My impression is, that the rigid discipline and the construction of the seats in our public schools, are fruitful sources of curvature of the spine. I have had two young misses, in the same family, with this affection, brought on, as I am confident, by their sitting posture at school. I can point out to you ten or twelve masters and misses (mostly misses) in one school in this city, who have curvatures of the spine, produced, as I fully believe, by the bad construction of the seats, and the posture in which the regulations of the school compel them to sit four or five hours in succession. Imagine, for instance, a delicate young miss seated on a piece of plank, of a size a little larger than your two hands, and required to sit there four or five hours without any support to the back. The muscles of the back soon become tired, and she, to relieve them, inclines to one side or the other, and from some accidental circumstance she generally gets into the habit of inclining to one particular side, i. e. to the right or left. The spine, of course, acquires a curve in the opposite

direction. One shoulder blade projects out, and one hip is more elevated than the other. Mothers, who are sharp-sighted with regard to any defect in the symmetry of their children, and particularly of their daughters, are generally the first to observe their deformities. They are commonly not aware that these irregularities are caused by a distortion of the spine. If the spine is accurately examined at this time, it will generally be found nearly to represent the Italic letter *S*. If judicious applications are made at this early period of the disease, the body may almost universally be restored to its pristine shape and symmetry, and the spine brought up to an erect position; but if suffered to go on unattended to, the deformity becomes incurable, and produces much mortification and suffering to the unfortunate individual who may be the subject of it.

Another cause of curved spines, not unfrequent in our public schools, is the desks on which children write. The desks are frequently not adapted to the height of the pupil. Imagine, for instance, a young master or miss compelled to write two hours, per day, on a desk from four to six inches too high. The right shoulder must necessarily be elevated, the right shoulder blade thrown out, and the spine of course curved. What posture-master, if he wished to produce a permanent distortion of the spine, could adopt a more ready method of accomplishing his object, than this?

It now, Sir, becomes proper to make some remarks on the mode of treating curvatures of the spine, after they have taken place. It was formerly the custom, particularly among machine makers, to load the unfortunate sufferer with irons, or brass encasements; and some modern practitioners (very few, I believe,) in this branch of surgery, have resumed this obsolete practice. They are called dressings. The first dressing consists of frames of iron, applied to the back and front of the body, and extending from the hips up above the shoulders. These frames are connected together by screws, and are so constructed as to press forcibly upon the most prominent parts of the body; for instance, as it may be, the right shoulder and the left breast—the pressure being diagonal. These frames, as I have before said, are united by screws, or some other apparatus which renders them capable of being tightened to any degree, consistent with the endurance of the patient. These machines are suffered to be worn for some months, and daily drawn tighter, for the purpose, as it is said, of forcing the bones into place. After this process has been gone through, the body is incarcerated in a solid brass mould, adapted in some measure to the shape and size of the body which it

is intended to envelope ; it extends from the hips to the arm pits, and is so constructed as to take a bearing upon the hips. This apparatus is made of solid brass, with folding doors in front, so as to admit the body, after which the doors are closed, and secured by strong fastenings, so constructed that they may be drawn tighter and tighter every day. The unfortunate sufferer is not permitted to take off this coat of mail, even at night, but is compelled to sleep in it, and this for months, and perhaps years. What is the result of this mode of treatment ? What must it necessarily be ? Perspiration is obstructed, circulation is impeded, the internal organs are compressed, the lungs have not room to play, the heart is embarrassed in its motions, the lower limbs swell, and *consumption* and a chain of untoward symptoms follow in the train.

But suppose the internal organs are capable of sustaining themselves under this pressure, and that they are able to carry on their healthy action, and perform their natural functions, under all these impediments ; what will the effects of this mode of treatment be upon the muscles of the back—those muscles intended by nature for the support of the fabric, to sustain the spine in its erect position, and to support the weight of the head and shoulders ? These having been kept in a state of inaction, have lost the power of action. When the artificial supports are taken away, they are incapable of sustaining the weight of the body, and the spine sometimes curves to an alarming degree. I have some drawings, taken from nature, (which you have undoubtedly seen) of curvatures of the spine, which are appalling to the sight. I cannot but think that this method of treating distortions of the spine is injudicious, unphilosophical, and calculated to do much harm ; and I am sustained in this opinion by very good authority.

The following quotations have a strong bearing upon this point. Dr. Portal, a very eminent French physician, in speaking of the strong, stiff stays in fashion at the time he wrote, says, “ Those who use them are sure to become distorted, for the muscles of the spine have been so weakened by the want of use, that when the artificial props are removed, they are no longer capable of supporting the body.” Van Swieten, the Dutch physician, whose name is illustrious in the annals of medicine, gives even a more distressing picture of the condition into which women may fall, who have been accustomed, from their infancy, to wear stiff stays. But the name lorica (coat of mail) by which he designates them, and his observations, would lead us to believe that the stays worn in his day were pecu-

liarly stiff and strong. “ Those who have been long accustomed to wear lorica can never lay them aside, for fear of the chest falling forwards in consequence of the weakened state of those muscles, which, when properly exercised, are not only capable of supporting the weight of the upper part of the body, but even of heavy burdens. Indeed I could not view but with pity, those who were so wretchedly reduced as not to dare to take off the stays even to go to sleep, much less to raise themselves, or to keep the body erect if brought into that position.”

Mr. J. Shaw, who has published an able treatise on curvature of the spine, makes the following remarks. “ We can conceive the bad effects that must have ensued from wearing such machines ; indeed, the consequences are well described by an eminent author who wrote about sixty years ago. Some nations have fancied that nature did not give a good shape to the head, and thought it would be better to mould it into the form of a sugar loaf. The Chinese think a woman’s foot much handsomer, if squeezed into one third part of its natural size. Some African nations have a like quarrel with the shape of the nose, which they think ought to be laid as flat as possible with the face. We laugh at the folly and are shocked at the cruelty of these barbarians, but think it a very clear case that the natural shape of a woman’s body is not so elegant as we can make it by the confinement of stays. The common effect of this practice is obstruction in the lungs, from their not having sufficient room to play, which, besides tainting the breath, cuts off numbers of young women in the very bloom of life. But nature has shown her resentment of this practice, by rendering above half the women of fashion deformed, in some degree or other. Deformity is peculiar to the civilized part of mankind, and is almost always the work of his own hands. The superior strength, just proportion, and agility of savages, are entirely the effects of their education, of their living mostly in the open air, and their limbs never having suffered any confinement.”

The above quotations tend to show the bad effects of artificial supports applied to the human body in such a manner as to impede the free exercise of the muscles, and prove very decidedly the absurdity of the method I have above described of incarcerating the body in iron or brass, for the purpose of correcting distortions of the spine—a method which, I am sorry to say, in this enlightened age is still practised by some, although condemned by every well educated physician and surgeon.

My object, in treating curvatures of the spine, is to give physical strength to the muscles generally, and particularly to those immediately connected with the defect I wish to remedy. Some artificial support is necessary for the purpose of relieving the spine of the weight of the head and shoulders, but I make use of none that at all interferes with the free use of the muscles. The inclined plane that I employ is so constructed that it extends the spine, and at the same time keeps the muscles of the back and loins in constant exercise. Shampooing, thumbing and friction are powerful auxiliaries in the treatment of spinal affections.

It is unnecessary to say to you, Sir, that in devoting a portion of my time to attending to spinal affections, I do not intend to neglect or be remiss in attending to the other duties of my profession.

I have the honor to be,

Yours, very respectfully,

J. B. BROWN.

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LETTER II.

DEAR SIR,

In a previous number of the Boston Medical and Surgical Journal, I had the honor of addressing to you some cursory remarks on curvatures of the spine in general. I now take the liberty to make some observations on particular curvatures, viz. the lateral, the posterior, and the anterior. Of these the lateral is very much the most common, and less likely to be accompanied by disease of the vertebræ than either of the others. The lateral curvature is very generally first formed in the loins, and more frequently than otherwise, towards the left side. In process of time another curvature is formed between the shoulders, in an opposite direction. This second curvature takes place as a matter of course ; it being essential for the purpose of balancing the head and shoulders.

I have at this time under my care a very remarkable curvature of the spine. The subject of it is a lady about 30. She was remarkably straight and erect until she was about 8 years old, when the spine began to curve in the loins, and afterwards the curve took place between the shoulders. These curves have been gradually increasing, up to the present time. I fear it will be difficult to give you an accurate idea of the peculiar curvature of this spine. I will attempt it

by beginning at the sacrum. The spine here goes off, almost at right angles, towards the left side for almost three inches; it then forms an arch, turns and runs in nearly a horizontal line to the right shoulder blade; it then forms an acute angle, and pursues its course to the neck. The cervical vertebrae are straight and erect. The head is placed on a line perpendicular to the centre of the pelvis. The shoulders are on a level with each other, and the hips are of equal height. As this lady approaches you in front, or turns from you and walks off, you would not notice anything in her appearance very remarkable, except the shortness of her body, compared with the length of her lower limbs. Her head and shoulders are well balanced. Still it must be obvious to you, if I have been successful in giving you an idea of the relative position of the parts, that the head and shoulders are sustained in the erect position to the great disadvantage of the supporting muscles.

The fact is, the horizontal turn which the spine takes across the body, and on which the head and shoulders rest, operates as a lever, greatly to the disadvantage of the supporting muscles. The head and shoulders are approaching daily nearer and nearer to the pelvis. The space now between the tops of the ilii or the hip bones, and the axilla or arm pits, is only four inches. Still the tops of her shoulders are level with each other, and so are the tops of her hips. This renders her situation peculiar, as there are very few cases where so great a deformity exists and the person is not one sided—either inclining to the right or left. The greatest inconvenience this lady complains of is, that she feels, to use her own words, as though she was sinking down, and that her shoulders would soon rest upon her hips. She has some reason for this sensation, for, as I have before mentioned, only a space of four inches now intervenes. All that can be done for her, is to render her situation more comfortable. I have put on spinal supports, so as to give aid to the spinal muscles, and prevent any further increase of the deformity. In this way she will probably go through life very comfortably. The difficulty will not, probably, increase, and as she seems to possess a great deal of philosophy and energy of character, I have no doubt she will enjoy life better than many who have mere imaginary troubles and complaints.

I have stated above, that in lateral curvatures, the curve first forms in the loins, and that the curve in the dorsal and cervical portions of the spine follows as a necessary consequence, to enable the body to preserve its equilibrium. If the curve in the loins can be straightened, it is almost a necessary consequence that the dorsal and cer-

vical portions of the spine will become straight also; and for the above reason, viz. to enable the body to preserve its equilibrium. This, however, will follow of consequence *only* where the dorsal and cervical portions of the spine are sound and healthy. If any of the vertebrae which compose the upper curve are ankylosed, it is obvious that a straightening of this curve will not follow as a consequence of straightening the lower curve. It appears to me that much importance is attached, and means ought to be employed, to straighten the lower curve in the first place. Suspending people by the head has very little effect upon the lower portion of the spinal column. It acts almost entirely on the neck. Casey's apparatus, therefore, and many others contrived for this purpose, do, in my opinion, very little good, and where ankyloses have formed between the vertebrae, or the vertebrae are diseased, they will do positive harm. If suspension is to be employed as a remedy, it is all important to ascertain the precise condition of the spine, by minute examination, previous to its being made use of. In simple lateral curvatures, moderate extension can do no harm. Lateral curvatures are simple or complex. A simple lateral curvature is unaccompanied by disease of the vertebrae, ankylosis, or stoop. A stoop, added to a lateral curvature, renders it complex, because all lateral curvatures are not accompanied by a stoop—in fact, a great proportion are not. Old people, girls who are obliged to sit much at work, and young ladies who play a great deal on the pianoforte, are very apt to contract a stoop. Where a stoop accompanies a lateral curvature of the spine, the treatment requires to be somewhat varied. Simple curvatures of the spine may be almost invariably cured, if taken in season; but when neglected for years, the vertebrae acquire a wedge-like shape, i. e. they become thinner on the concave, and thicker on the convex side of the curve. This is the natural consequence of unequal pressure—the weight of the superincumbent body being almost entirely supported upon the edges of the concave side of the curvature. The only rational way of treating curvatures of this kind is, to relieve the spine of the weight of the head and shoulders, by mechanical apparatus, so constructed as not to impede the action of the muscles, until absorption has taken place on the thickened side of the vertebrae, and ossific matter thrown out on that side which has been thinned by pressure; at the same time making use of appropriate gymnastic exercises for strengthening the muscles of the back, so that when the mechanical support shall be removed, they may be able to keep the spine in its natural erect position. The former object is effected by my spinal

spring supports—the latter by exercise with the spring, and other exercises calculated to bring the muscles of the back into action.

I have said above that spinal curvatures, particularly simple lateral curvatures, may be cured if attended to at an early period; and I should recommend to parents to be particular in watching the forms of their children, from the age of 8 to 16, and more particularly the shape of their backs. Curvatures of the spine come on insidiously, and are frequently unnoticed until they produce a very considerable deformity. The *growing out* of one shoulder, the elevation of one hip, and the enlargement of one breast, are marks of curvature of the spine. These marks, parents would do well to keep in mind.

*Posterior and Anterior Curvatures of the Spine.*—These deformities occur very much less frequently than lateral curvatures, and are occasioned very generally, I believe, by external injury, rickets, scrofula, some constitutional disease, or, in fact, any accidental circumstance that excites inflammation of the vertebræ or intervertebral substance.

Those remedies which have proved the most efficacious in the treatment of these complaints, particularly at their commencement, are leeches, blisters, irritating ointments, and internal remedies, such as may be indicated by the particular state of the constitution at the time. If during the treatment exercise is admissible, artificial supports will be found necessary, and will very much facilitate the cure, and have a great tendency to lessen the deformity.

The more I reflect upon the functions of the spinal column, the more important I consider its diseases. There is not an organ in the human body whose disorders produce greater disturbance or more complicated symptoms. Diseases, apparently remote, have their origin not unfrequently in the spinal cord, or the nerves that proceed from it. We are apt to make our applications to the part or organ which seems particularly affected, instead of to the spine, which is the actual seat of the difficulty. Formidable complaints, such as hemiplegia, paraplegia, &c., are immediately referred to the brain, or spinal nerve, for their cause; but we seldom look to the spine as the origin of minor local diseases.

Dyspepsia, palpitations of the heart, flatulence, affections of the bowels and all the abdominal viscera, and of the upper and lower extremities, upon close examination, may be found to originate not unfrequently in some derangement of the spinal column. The anomalous complaints of young females, and also of boys, may be traced very frequently to the spine; either to some affection of the great

spinal nerve, ganglia, or the nervous filaments that proceed from them.

There is no affection more common, as the consequence of spinal irritation, than a pain in the back of the head, confined principally to the scalp ; and still we are not apt to look for its origin in the spinal nerves. Even a slight curvature produces a derangement in the nervous influence. An inclination of the bony column to one side, although it may be so slight as hardly to be perceptible, has its influence upon the great spinal nerve, the ganglia, and the nervous filaments that proceed from them. The spinal column cannot be altered (I mean permanently) from an erect position, without danger of disturbing the functions of some remote organ or part, whose nerves are supplied therefrom.

I was called to a patient not long since, a lad about 15 years old, who had a variety of complaints, not readily accounted for. He had been attended by an eminent physician, a gentleman for whom I have the highest respect. His complaints were a painful affection of the eyes, palpitations of the heart, indigestion, a painful affection of the scalp, and a torpid state of the alimentary canal. I immediately examined the spine, and passed my fingers up and down its whole length. I found two portions of it tender, viz. about the middle of the dorsal, and the middle of the lumbar vertebræ. When I pressed on the transverse process of the middle lumbar vertebræ, he invariably complained of pain in the abdomen. These circumstances convinced me that all his complaints proceeded from spinal irritation, and I stated my conviction to the physician who had attended him. He could not be persuaded that all this chain of symptoms could proceed from this source. In the course of two or three weeks three of the lumbar vertebræ began to project. They were evidently enlarged, probably from inflammation and swelling of the intervertebral substance. The attending physician was then convinced that all the complaints of this lad were caused by a disease of the spinal column and the nerves that proceeded from it, affecting remote parts and organs.

In connection with this subject, and to show how diseases in remote parts of the body may have their origin in, and be connected with, diseases of the spine and its nerves, I will relate a case which a medical friend stated to me came under his observation. The patient was a boy, who complained of extreme pain in the three small toes of his left foot. The pain was excruciating ; still no disease in them was apparent. There was no swelling, no redness, no symp-

tom of inflammation. The appearance of the toes was natural. Leeches, blisters and poultices were applied, but to no effect. The pain was so excruciating that the boy could get no sleep for several nights in succession. Very large quantities of laudanum were given, but without producing sleep, which could not be obtained. Consultations were held, and it was agreed, upon all sides, that the case was a singular one and not easily to be accounted for. The attending physician, as he was sitting by his patient one day, passed his fingers, rather accidentally, down his back, until they came to the sacrum, when the boy immediately screeched out, "let my toes alone." He then passed his whole hand upon the sacrum, and the boy cried out again, "let my blister alone," meaning the blister on his foot. The fact is, that when the doctor pressed with his fingers, the sensation was more marked and definite; but when he pressed with his whole hand, the sensation was as if the whole blistered surface of his foot was rudely touched. Applications were immediately made to the sacrum and lower part of the spine, and the boy was immediately relieved.

I have the honor to be,

Yours, very respectfully,

JOHN B. BROWN.

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THE above letters were published about a year and a half ago, first in the Boston Medical and Surgical Journal, and afterwards in a pamphlet form. That edition having been disposed of, they are now republished with additions, in connection with some cursory remarks on the treatment of club feet, accompanied with a history of a few of the cases which have come under my care. Since I have turned my attention to the correction of physical deformities, I have had a large number of patients under my care, afflicted with affections of the spine in all its variety of shapes, and have had the good fortune to have none go away dissatisfied, or if they were so, it has not come to my knowledge. My mode of treatment, I believe, has been approved of by the profession generally. I judge so, from the circumstance that my patients have come to me, very generally, through the recommendation of distinguished physicians, and in a number of instances were members or connections of their own immediate families. This has been particularly gratifying. It has given me great pleasure, and I should do injustice to my own feelings if I did not

embrace this opportunity to express my grateful recollection of their confidence and friendship.

The Orthopedic Infirmary has now been in operation about two years, and I have the satisfaction of believing it is doing much good. It has been favorably noticed by different periodicals in this country. The following articles appeared in the Boston Medical and Surgical Journal.

“ *Orthopedic Institution.*—An institution is now in successful operation, in Boston, for the cure of spinal distortions, club-feet, &c., which has received the appropriate appellation of *Orthopedic Infirmary*. *Orthos*, in Greek, means right, and *pais* child, and which are made use of in French to denote that branch of surgery which has for its object the prevention and cure of deformities in children. There is no word in the English language which has the same significance. This infirmary is conducted by John B. Brown, M.D., at No. 65 Belknap street. By looking at the prospectus it will be noticed that most of the seniors of the profession in Boston, approve of the plan of treatment, and have kindly offered their gratuitous advice in all difficult cases.

“ Under these favorable auspices, there is every reason for believing that the infirmary will prove an useful institution, that it will be judiciously and scientifically managed. In Paris, the Orthopedic Institution has been appreciated by the benevolent, there being a large capital invested in apparatus adapted to the various distortions and deformities of the body—particularly in children and young persons of both sexes. Dr. Brown has recently received a minute report from the two surgeons who control it, which presents a detailed account of the principles and modes of treatment.

“ Spinal affections are continually increasing amongst us, as an accompaniment of civilization, and it is important, therefore, that the best mode of correcting and preventing them, should be based upon true anatomical and physiological principles. Until within a few years, comparatively, these complaints, even in Europe, were left to the management of quacks and machine-makers; and much unnecessary suffering and derangement of health has been the unfortunate result.

“ Much has been said, of late, of the effects produced on the general condition of the body by compressing the whole trunk in such a manner as to impede the functions of the vital organs. A mode of practice is at this moment in vogue, of casing up a patient in a metallic corslet, which is not justified by any discoveries in anatomy. The frame-work of man is constructed of material altogether too delicate for enduring the violence inflicted by processes so unphilosophical. We view Dr. Brown’s plan of operations for restoring distorted limbs and spinal curvatures, as unexceptionable, because they are sustained by the acknowledged principles of anatomy and physiology. To long professional experience, this gentleman unites

a mechanical ingenuity and skill, without which no success can be expected in this peculiar department of surgery. In view of the great and good object he proposes, we cordially wish the infirmary success, and freely express a hope that the community will appreciate the advantages of having it located in this city—under the direction of one who manifests a determination to exert every power to sustain it with increasing reputation. Although comparatively in its infancy, we are assured that the applicants are numerous, and it is much to be deplored that many calls are from that class of worthy, industrious poor, who are wholly unable to pay for the necessary apparatus. In spinal distortions, particularly, the success of Dr. Brown is extremely encouraging, and will have a tendency to prevent patients from going expensive journeys for medical advice which can be obtained at home.

*the use of*  
 “It occurs to us to make reference to a case of club-feet, in which the bones were strangely twisted out of place and shape, and in which the restoration is now nearly complete. A little girl, three years of age, both of whose feet were turned in (*vari*), together with the loss of the lower extremities from birth—the bones of the legs being so curved that the fibula of each rested on the anterior part of the tibia, after having been six months a subject of the infirmary, could stand in an erect position, balancing herself in a rocking-chair while in motion. Perhaps this was one of the most difficult and unpromising subjects that could have been selected. She was placed under Dr. Brown’s care, we understand, by the recommendation of the President of the Massachusetts Medical Society.

“On the whole, we are gratified with the progress which is making in this benevolently devised institution, which only requires to be extensively known, to be upheld by the strong arm of an intelligent community.”—*Medical Journal, Jan. 9, 1839.*

“*Orthopedic Institution.*—To the Editor of the Boston Medical and Surgical Journal.—SIR,—I wish to improve a small portion of your Journal, to invite the attention of the profession to the valuable institution above named, under the care of Dr. Brown, in our city, by the publication of a letter recently received from the father of one of those unfortunates, the objects of his sympathy and skill. I have had the pleasure of witnessing several cases of spinal distortion, hitherto regarded as hopeless, materially benefited at this institution, and the appalling deformity of club-feet completely removed by a simple yet skilful operation, to which I feel bound to allude. Still, however, I will merely ask you to give publicity to the following brief communication, which I think will not only fix the attention of the profession upon the high claims of the conductor of this recent institution, but may be blessed to many sufferers who have yielded themselves to a hopeless abandonment of recovery.

*Boston, April 8, 1839.*

Respectfully, &c.

E. W. LEACH.

Conway, N. H., April 4, 1839.

DEAR SIR,—You will recollect that I called on you a few weeks since, with my daughter, who was suffering under a complaint of the spine. You recommended me to the orthopedic institution of your city. I called on Dr. Jackson, who advised me to Dr. Brown, as the only prospect of relieving my daughter's sufferings. Not having an opportunity to see you, as I should have desired, I feel bound to address you to express my gratitude for your recommending me to this institution—and also to acquaint you with my entire satisfaction with the manner in which it is conducted. After a careful examination of the case of my daughter, Dr. B. advised me to remain a short time in Boston with her, which I did. We passed three weeks only in the city, and she is now three inches taller than when I placed her under his care. The day before we left Boston, she walked to the Navy Yard in Charlestown, and returned, with but comparatively little fatigue. I know not in what terms to express my gratitude for the benefit which has already been conferred, in a case which we considered hopeless, and for nine years has been growing worse and worse—and this in the brief period of three weeks. Had I time I should like to speak of the different cases of spinal affections which I saw treated; but I ask you to examine for yourself and for the afflicted who may apply to you for counsel. This institution is doing much good, and I feel that no individual testimony in its favor should be withheld. Grateful for the interest you manifested in my daughter's welfare, and that your advice has been blessed to her great relief,

I am your obedient servant,

B. HALE.

To E. W. Leach, M.D.

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The following letters are inserted with the consent of the writers.

J. B. BROWN, M.D.—DEAR SIR,—I am truly grateful to you for your kind and judicious attentions to my niece. Her case was not favorable for the exhibition of striking results. But she has been essentially benefited under your care; and the opportunity it has afforded me of observing your practice, has fully confirmed my opinion of the correctness of the general principles on which it is founded, and has given me a high estimate of the skill and tact with which you adapt those principles to the peculiarities of individual cases.

Very truly yours,

Boston, Oct. 26, 1839.

ENOCH HALE, M.D.

DR. BROWN.—DEAR SIR,—I have this morning received your note, requesting from me a statement of the case of Miss Anna A. Hanson, whom I had the pleasure of transferring to your care for treatment of a curvature of the spine. From the favorable issue of the

case, and the gratification of the friends of the patient, I most cheerfully comply with your request. At the time you commenced the treatment of her case, which was in February last, she was ten and a half years of age. She had been gradually losing her health for about two years, during which time the spinal affection had been coming on. The curvature was lateral, and of considerable extent, attended with much pain about the back and shoulders, and occasional paroxysms of severe pain in the head, with much derangement of the digestive organs. She continued the use of your spinal braces, extension plane, spring, &c., for six months, and for the last three months has been in the country. The curvature of the spine has been very much diminished, if not entirely removed. The pain in her back, shoulders and head, have entirely ceased. She has regained her usual vivacity and cheerfulness. Her friends write that she is growing rapidly, and that her general health is well established.

With much respect I remain,

Yours, &c.

*Boston, Oct. 28, 1839.*

J. H. LANE, M.D.

DEAR SIR,—In two cases, in which I have been particularly interested, I have seen the result of your method of treating spinal curvatures, and it has been highly satisfactory.

A Teacher in the Charlestown Female Seminary, whom my duties led me to see almost daily, has had this affection for two years or more. It had grown worse till last spring, when the deformity was very apparent, and her general health began to suffer, so that I feared she would be obliged to relinquish her duties; but she then took your advice and followed your plan of cure, which has not for a single day kept her from the seminary, or interrupted her duties. Her form is now greatly improved; indeed there is no apparent deformity, and her general health is very good.

A niece of mine from Portsmouth, N. H., has had spinal curvature for at least three years, and of late, especially, it had rapidly increased, till the change in form was so great as considerably to impede the functions of the lungs, and to produce almost constant pain in the side. In July last, I induced her to come here and place herself under your care, and she is still pursuing your mode of treatment, with a gradual, but very perceptible improvement in her form and general health. She has now no pain in her side, and the curvature is so much diminished, as to give me confidence that she will be perfectly restored. Your method seems to me to be well adapt-

ed to the cure of curable cases, and to the relief of incurable, and to effect its object with the least possible inconvenience to the patient.

Yours respectfully,

*Charlestown, Oct. 28, 1839.* ALBERT J. BELLows, M.D.

DR. BROWN.—DEAR SIR,—It is with great pleasure that I am able to say to you, that my brother-in-law, who called on you for advice, was very essentially benefited by the use of your apparatus and following your directions. His general health was very bad, and the curvature of the spine constantly increasing; but on using your apparatus, and friction, the spinal disease was soon arrested, and I doubt not but a persevering use of the apparatus will ultimately remove most of the deformity. His general health is now good. From the happy result of your method of practice in this case, I feel assured that of the multitude that suffer with spinal distortions, nearly every case might be cured, if taken early in the disease, and that in all cases the sufferings may be very much mitigated.

Respectfully yours,

*Chelsea, Oct. 21, 1839.*

CHARLES CHASE, M.D.

DEAR SIR,—The bearer, Miss P., accompanies a sister (who is affected with a spinal complaint) to Boston, for the purpose of placing her under your care. The success that has attended your efforts for my child, has induced her mother to send her up, and she hopes something may be done for her. The family are very respectable. Miss P. would be glad to have you render some assistance in obtaining a good boarding place. My little girl continues to improve, and I have no doubt of her entire recovery.

With much respect, yours, &c.

*Rochester, Sept. 23, 1839.*

BENJ. BARKER.

## ORTHOPEDIC INFIRMARY,

FOR THE TREATMENT OF SPINAL DISTORTIONS, CLUB-FEET, ETC.

At 65 Belknap Street, Boston. Patients from a distance can be accommodated with board in the immediate neighborhood.

JOHN B. BROWN, M.D., Surgeon.

We the subscribers approve of Dr. J. B. Brown's plan of an Infirmary for the treatment of Spinal Affections, Club-Feet, and other distortions of the human body, and will aid him by our advice whenever called upon.

John C. Warren, George Hayward, Edw. Reynolds, Jno. Randall, J. Mason Warren, John Jeffries, John Homans, M. S. Perry, W. Channing, George C. Shattuck, Jacob Bigelow, Enoch Hale, W. Strong, George Parkman, D. Humphreys Storer, George W. Otis, Jr., Winslow Lewis, Jr., J. H. Lane, Edw. Warren, George B. Doane, John Ware, George Bartlett, John Flint, J. V. C. Smith.

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## REVISED RULES AND REGULATIONS OF THE INFIRMARY.

For the information of those who wish to enter this Institution, it has been thought the terms upon which they can be admitted should be printed. Still the surgeon has it in his power to make such deviation from the general rules as he may think the pecuniary situation of his patient or the urgency of the case may require.

REG. 1. All patients with curved or distorted spines, who require protracted treatment, will pay in advance \$30; or if the apparatus is sent to their places of residence, \$50. This will entitle them to the free use of all the variety of apparatus made use of for correcting curvatures of the spine, and for gymnastic exercises, so long as they remain in Boston or its immediate vicinity.

REG. 2. Medical attendance in Boston by the year, \$100. For six months, \$75. No patient with curved spine will be received for a less term than six months, and where the curvature has been of long standing, it is not desirable to receive them for a less term than one or more years.

REG. 3. Patients with club-feet, will pay in advance \$25 for each foot that may require an operation. The necessary apparatus will be furnished without extra charge, boots excepted. All subsequent visits that may be necessary in attendance upon the same, will be charged at \$1.50 per visit. To those unable to pay the full fee, a discount of one third will be made.

REG. 4. The fees for the treatment of all anomalous cases of contracted limbs, and other distortions, will be in conformity to the above regulations.

The Institution will furnish board and lodging, in good families, at from three to five dollars per week. Many families in the immediate neighborhood of the Institution have volunteered to board patients upon the above terms; and it is very much more desirable that patients should be placed in private families, where their peculiar wants can be attended to, than in Hospitals, or in large, public boarding houses. The Surgeon has thought it would contribute more to the comfort, happiness and health of his patients, to have them dispersed about him in his neighborhood, in private families, than to be huddled together in one large establishment. It will give him a little more trouble in attendance, but the domestic comforts of his patients can certainly be better attended to in private families, than in large Hospitals or public boarding houses.

REG. 5. As some losses have already been sustained by the Institution, it is thought prudent that some assurance should be given that the board and other expenses should be paid, agreeably to the above regulations.



